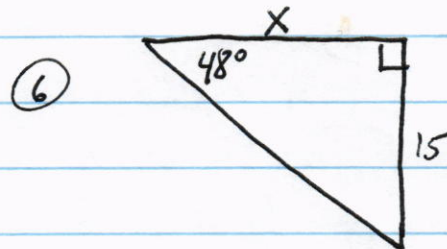
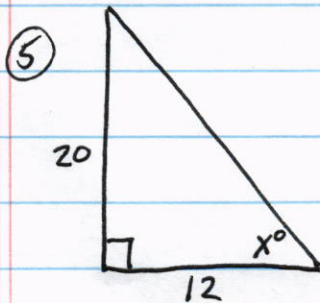
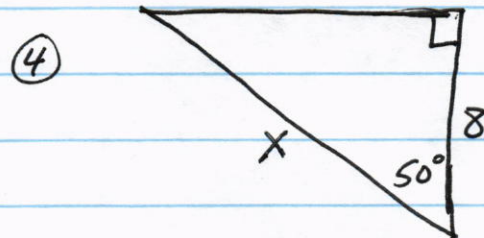
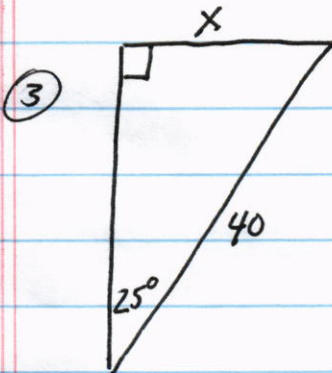
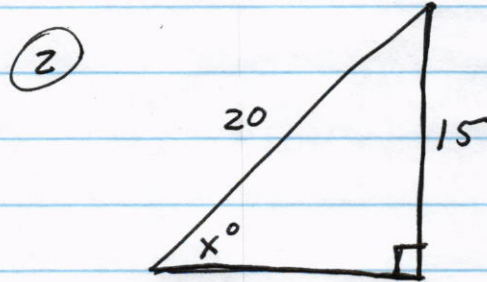
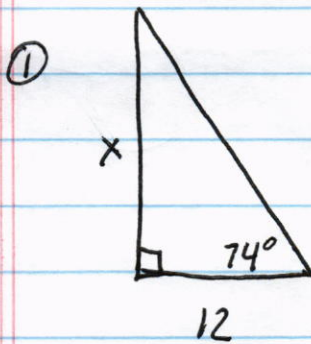


Station 1

Find x :



⑤ $\frac{1}{2} \cdot a \cdot b \cdot \sin C = \frac{1}{2} \cdot 50 \cdot 18 \cdot \sin 40 = 112.5$

⑤ $\frac{1}{2} \cdot p \cdot r = \frac{1}{2} \cdot 11 \cdot 15 = 82.5$

⑤ $\frac{1}{2} \cdot a \cdot b \cdot \sin C = 112.5$
 ⑤ $\frac{1}{2} \cdot p \cdot r = 82.5$ } $2(112.5)(82.5)(10.2)(5.2) = 113.7$

Station 2

⑦ The angle of elevation to the top of a 30 ft flagpole is 20° from where you stand. How tall is the flagpole?

⑧ A giant inflatable cow is on the roof of "McDonald's" 60 ft away. The angle of elevation to the roof is 18° , the angle of elevation to the top of the cow is 30° . How tall is the cow?

$$1 \tan 18 = \frac{x}{12}$$

$$x = 13.2$$

$$2 \tan x = \frac{15}{30}$$

$$x = 26$$

$$4 \cos 20 = \frac{x}{12}$$

$$x = 15.1$$

$$3 \sin 20 = \frac{x}{10}$$

$$x = 10.6$$

$$5 \sin x = \frac{10}{12}$$

$$x = 48.5$$

$$1 \tan 45 = \frac{x}{12}$$

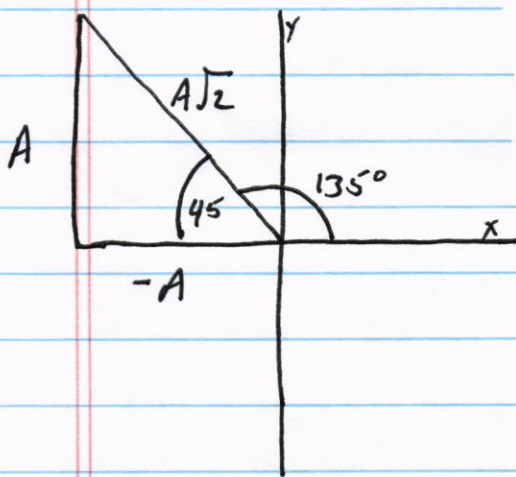
$$x = 12$$

Station 3

⑨ What is the reference angle for 300° ?

⑩ What is the reference angle for 150° ?

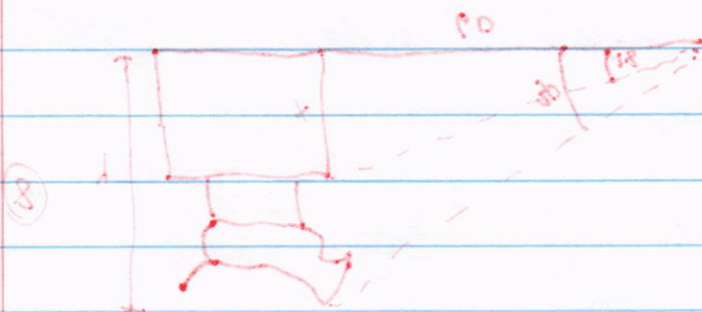
135° :



⑪ $\sin 135^\circ =$

⑫ $\cos 135^\circ =$

⑬ $\tan 135^\circ =$



comp: $10 - x = 12$

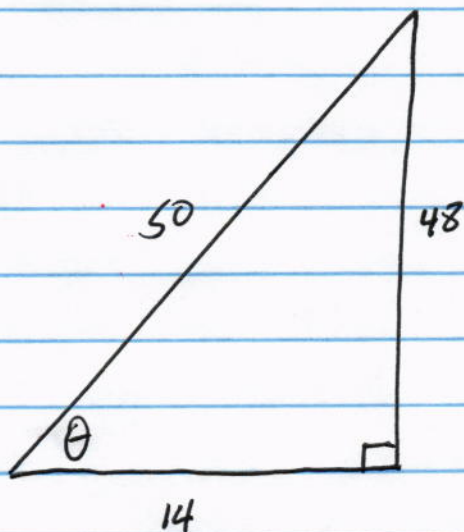
comp: $\tan 30 = \frac{10}{x}$ $x = 34.6$

W.D.? $\tan 18 = \frac{10}{x}$ $x = 31.2$



W.D.? $\tan 30 = \frac{x}{30}$ $x = 85.4$

Station 4



Give the exact values

⑭ $\sin \theta =$

⑮ $\cos \theta =$

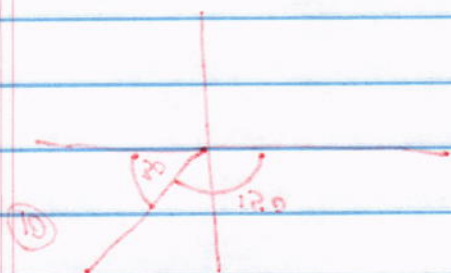
⑯ $\tan \theta =$

⑰ $\csc \theta =$

⑱ $\sec \theta =$

⑲ $\cot \theta =$

⑫ $\frac{1}{\frac{1}{4}} = 4$
 ⑬ $\frac{1}{\frac{1}{16}} = 16$
 ⑭ $\frac{1}{\frac{1}{4}} = 4$
 ⑮ $\frac{1}{\frac{1}{16}} = 16$
 ⑯ $\frac{1}{\frac{1}{4}} = 4$
 ⑰ $\frac{1}{\frac{1}{16}} = 16$
 ⑱ $\frac{1}{\frac{1}{4}} = 4$
 ⑲ $\frac{1}{\frac{1}{16}} = 16$



30°

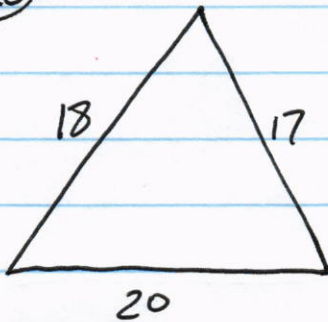


30°

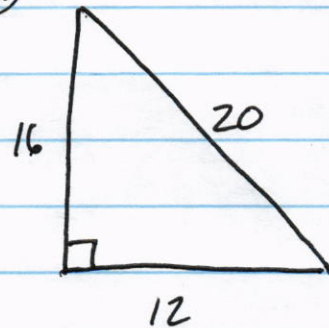
Station 5

Find the area of each triangle:

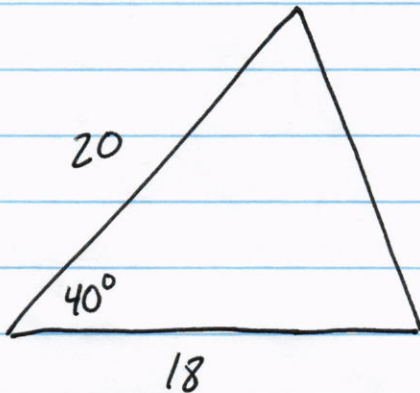
(20)



(21)



(22)



(16) $\sin = \frac{12}{13} = \frac{12}{13}$

(17) $\cos = \frac{5}{13} = \frac{5}{13}$

(18) $\tan = \frac{12}{5} = \frac{12}{5}$

(19) $\sec = \frac{13}{5} = \frac{13}{5}$

(20) $\csc = \frac{13}{12} = \frac{13}{12}$

(21) $\cot = \frac{5}{12} = \frac{5}{12}$

$$1 \quad \tan 74 = \frac{x}{12} \quad x = 41.8$$

$$2 \quad \sin x = \frac{15}{20} \quad x = 48.6$$

$$3 \quad \sin 25 = \frac{x}{40} \quad x = 16.9$$

$$4 \quad \cos 50 = \frac{8}{x} \quad x = 12.4$$

$$5 \quad \tan x = \frac{20}{12} \quad x = 59$$

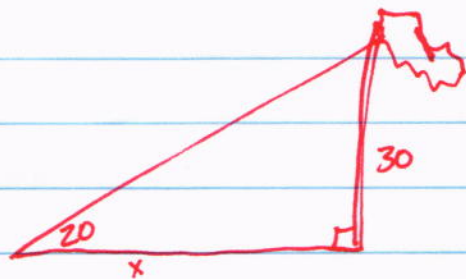
$$6 \quad \tan 48 = \frac{15}{x} \quad x = 13.5$$

How tall is the wall?
 of elevation to the top of the wall is 30°
 elevation to the top of the wall is 18° the angle
 to the top of the wall is 18° the angle of
 elevation to the top of the wall is 18° the angle of
 elevation to the top of the wall is 18° the angle of

How tall is the building?
 of elevation to the top of the building is 30°
 of elevation to the top of the building is 30°
 of elevation to the top of the building is 30°

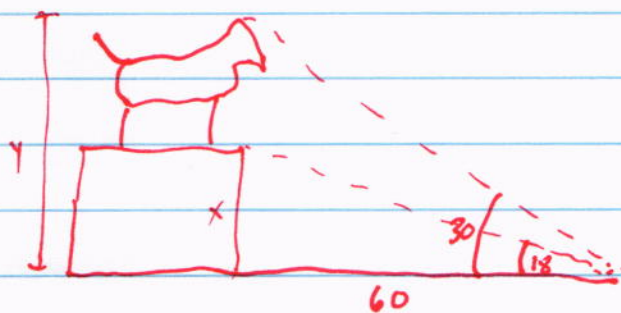
Station 5

7



$$\tan 20 = \frac{30}{x} \quad x = 82.4$$

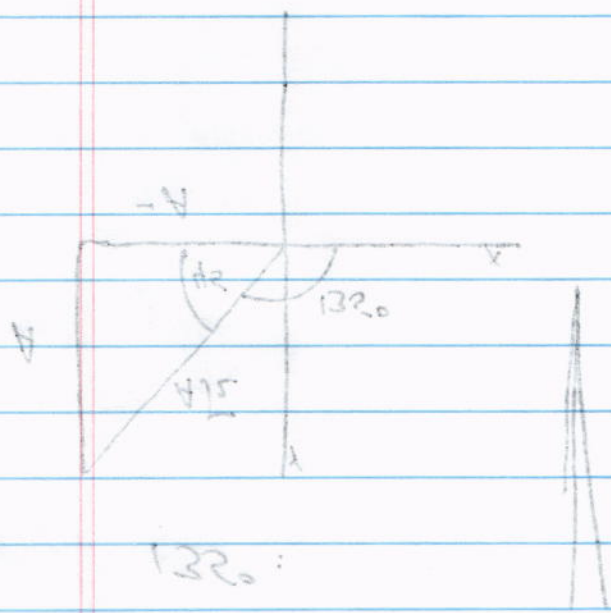
8



$$\text{McD's: } \tan 18 = \frac{x}{60} \quad x = 19.5$$

$$\text{cow: } \tan 30 = \frac{y}{60} \quad y = 34.6$$

$$\text{cow: } y - x = 15.1$$



13 $\tan 132.0 =$

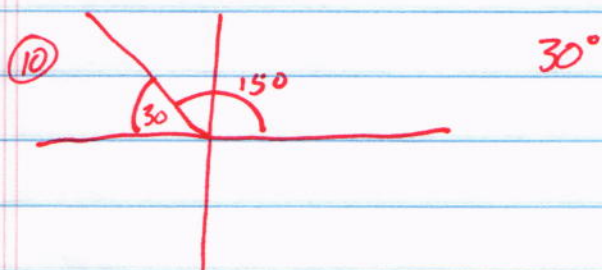
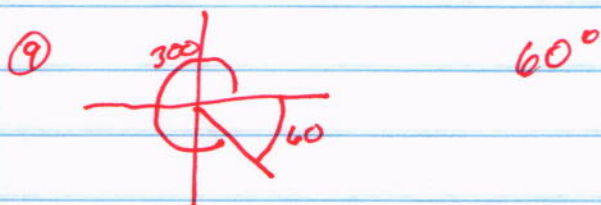
15 $\tan 132.0 =$

11 $\tan 132.0 =$

10 What is the reference angle for 120° ?

9 What is the reference angle for 300° ?

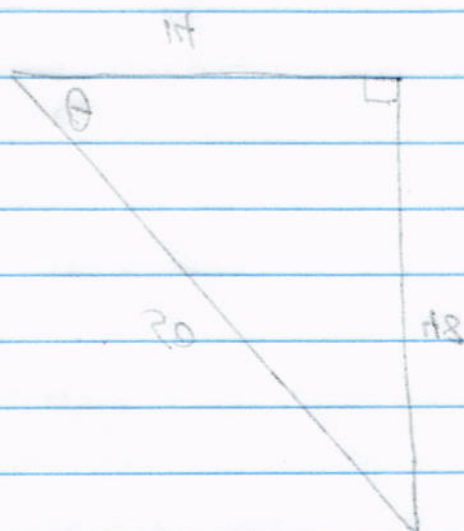
240 from 3



⑪ $\frac{A}{A\sqrt{2}} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

⑫ $\frac{-A}{A\sqrt{2}} = -\frac{1}{\sqrt{2}} = -\frac{\sqrt{2}}{2}$

⑬ $\frac{A}{-A} = -1$



⑭ $\cos \theta =$

⑮ $\sin \theta =$

⑯ $\tan \theta =$

⑰ $\cot \theta =$

⑱ $\sec \theta =$

⑲ $\csc \theta =$

angle theta is 30°

is positive

$$(14) \sin = \frac{O}{H} = \frac{48}{50} = \frac{24}{25}$$

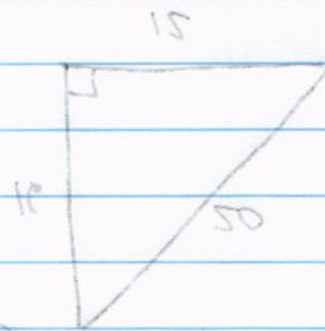
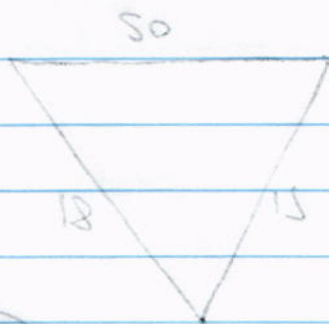
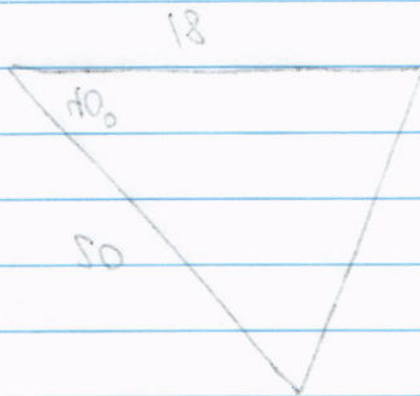
$$(15) \cos = \frac{A}{H} = \frac{14}{50} = \frac{7}{25}$$

$$(16) \tan = \frac{O}{A} = \frac{48}{14} = \frac{24}{7}$$

$$(17) \csc = \frac{H}{O} = \frac{50}{48} = \frac{25}{24}$$

$$(18) \sec = \frac{H}{A} = \frac{50}{14} = \frac{25}{7}$$

$$(19) \cot = \frac{A}{O} = \frac{14}{48} = \frac{7}{24}$$



algebraic way to solve it but

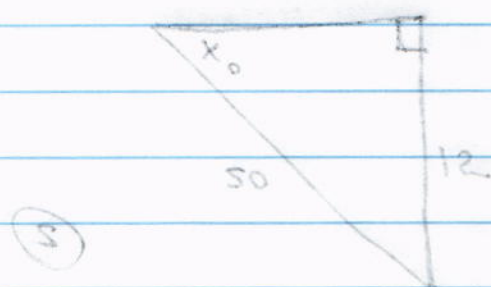
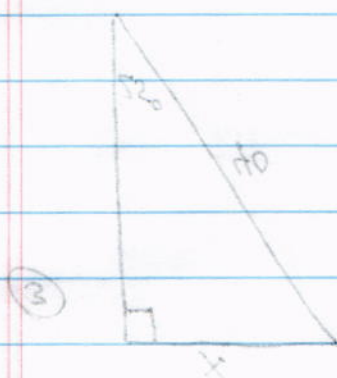
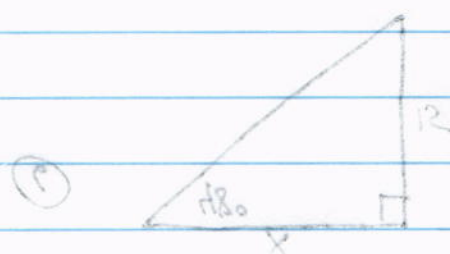
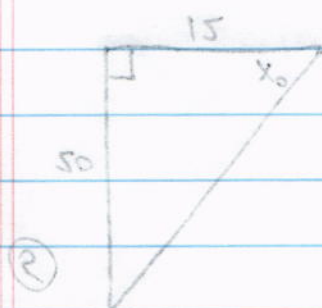
2 marks

(20) Perimeter: 55
 Semiperimeter: 27.5

$$\sqrt{(27.5)(9.5)(10.5)(7.5)} = 143.4$$

(21) $\frac{1}{2} \cdot b \cdot h = \frac{1}{2} \cdot 16 \cdot 12 = 96$

(22) $\frac{1}{2} \cdot a \cdot b \cdot \sin C = \frac{1}{2} \cdot 20 \cdot 18 \cdot \sin 40 = 115.7$



Long x:
 24000